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THESIS

COULD REALISTIC JOB PREVIEWS REDUCE FIRST-TERM ATTRITION?

by

Gary D. Brose

March 1999

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This thesis examines whether realistic job previews (RJPs) can be used to reduce the first-term attrition of Navy recruits. The methodology consists of a literature review in which previous RJP studies are examined for their relevance to military accession and training processes. The military's use of educational screens, trends and costs of first-term attrition, and labor market theories of turnover are discussed to provide a common frame of reference within which to view the person-job matching process and its consequences. In general, the literature suggests that RJPs are effective in reducing turnover and could result in long-term savings in recruiting and training sailors. However, there are also costs associated with the use of RJPs. These costs are primarily short-term, and include funding for development and implementation, as well as the potential for increasing recruiting costs through lower rates of job acceptance. Consideration must be given to whether the benefits of reduced attrition outweigh these costs. Recommendations for further research and a conceptual framework for an RJP are also provided.

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COULD REALISTIC JOB PREVIEWS REDUCE FIRST-TERM ATTRITION?

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Submitted in partial fulfillment of the
requirements for the degree of

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ABSTRACT

This thesis examines whether realistic job previews (RJPs) can be used to reduce the first-term attrition of Navy recruits. The methodology consists of a literature review in which previous RJP studies are examined for their relevance to military accession and training processes. The military's use of educational screens, trends and costs of first-term attrition, and labor market theories of turnover are discussed to provide a common frame of reference within which to view the person-job matching process and its consequences. In general, the literature suggests that RJPs are effective in reducing turnover and could result in long-term savings in recruiting and training sailors. However, there are also costs associated with the use of RJPs. These costs are primarily short-term, and include funding for development and implementation, as well as the potential for increasing recruiting costs through lower rates of job acceptance. Consideration must be given to whether the benefits of reduced attrition outweigh these costs. Recommendations for further research and a conceptual framework for an RJP are also provided.

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I. INTRODUCTION

A. DEFINING THE ISSUE

A 1979 study of military recruit training attrition (Mobley, Hand, Baker, and Meglino, 1979) offers the following observations on first-term attrition of enlisted personnel in the Navy:

> Premature separation rates in excess of 33 percent among Navy enlistees have recently been reported (Sands, 1978). Declining numbers of citizens in the primary recruiting age groups, a slowly improving economy providing alternative employment opportunities, and increasing technologically sophisticated manpower requirements serve to underscore the nature of the problem (see, e.g., Sinaiko, 1977).

Apparently, as the saying goes, "the more things change, the more they stay the same." In the nearly two decades that have passed since the authors delivered this commentary, early attrition rates have remained virtually unchanged, the current state of the economy features a 26-year record low unemployment level, and the relentless pace of technology continues to force intense labor market competition for highly-educated workers. One other factor that remains unchanged is the military's continued reliance on educational screening as the primary determinant of enlistment eligibility. For decades, military manpower planners have held sacred the belief that recruits with a high school diploma are far more likely to complete their first term of enlistment than are those who drop out of high school. Numerous studies throughout the years have reinforced this viewpoint (see, for example, Buddin, 1984, Cooke and Quester, 1992, and Kearl and Nelson, 1992). Because of the apparent connection between successful completion of high school and successful completion of one's first-term of enlistment, and because of

the simple elegance of the diploma as a selection device,[1] the services have relied very heavily on, and invested very heavily in, high school diploma graduate (HSDG) recruits.

For the All-Volunteer Force, however, first-term attrition across the military services has remained stable at approximately 30 percent, despite the increasing investment in recruiting HSDGs. A 1997 report by the General Accounting Office (GAO) determined that, in fiscal year (FY) 1994,[2] 96 percent of all military recruits had a high school diploma. Yet, of the 176,000 recruits who entered the military that year, 25,000 (over 14 percent) were separated with the first six months of service. This suggests that, while a diploma may be an important predictor of attrition risk, its effectiveness as a "stand-alone" measure is apparently somewhat limited, implying the need for a supplementary means of assessing the likelihood of successful person-job matches within the military.

B. RESEARCH QUESTIONS AND METHODOLOGY

This thesis examines one such means of increasing the probability of a good person-job match—that of providing a realistic job preview (RJP) to military recruits during the enlistment process. RJPs are intended to provide applicants with a balanced view of the job in which they are interested, including an honest portrayal of both the positive and negative job characteristics and conditions of work. Since, presumably,

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[1] An increase in the number and type of alternate education credentials has complicated the problem. A multi-tiered system of credential preferences has been developed in response. For more on this, see Janice H. Laurence, *Does Education Credential Still Predict Attrition?*, paper presented at the 105th Annual Convention of the American Psychological Association, Chicago, IL, August 1997.

[2] Fiscal Year 1994 was a perfectly representative year in terms of recruit quality, and the latest for which the Defense Manpower Data Center (DMDC) had complete statistics at the time of the GAO review.

applicants have convinced themselves of the "good" qualities of a job prior to seeking it, RJPs, by presenting the corresponding "bad" attributes, may serve to reduce these overly positive expectations. If job seekers accept the job after learning of its undesirable traits, they may be presumed to be more dedicated to success. They should then be correspondingly less likely to suffer the unexpected and unpleasant surprises that contribute to attrition. Results of research in the field of industrial/organizational psychology suggest that RJPs may help prevent poor person-job matches, resulting in decreased turnover for new employees.

Are the benefits of RJPs transferable to the military, specifically the Navy? If potential recruits were exposed to the unpleasant facets of Navy life prior to their contractual obligation, would those who elected to enlist be less likely to leave service prematurely? This research examines previous work in the field for its applicability to the Navy recruitment process. Specifically, the thesis seeks to answer the following questions:

1. Would the Navy benefit from the administration of pre-hire RJPs?
2. If so, what are the potential benefits?
3. At what costs are these benefits achieved?
4. Are there any other considerations?
5. What is the best way to present pre-hire RJPs?

The approach consists primarily of an extensive literature review of applied research into the uses and effects of RJP in diverse organizational settings. The literature concerning the effects of RJP on turnover is substantial. In the combined interests of brevity and relevance, the studies selected for inclusion in this work were limited and fall generally into two categories. The first category includes research efforts that are

military-specific, or otherwise topically generalizable to the military. The second consists of three meta-analyses published between 1985 and 1997. In all, these three meta-analyses account for a total of 37 studies that are concerned with the effects of RJPs on turnover. The use of meta-analyses was selected in consideration of their ability to quantitatively cumulate results across studies, permitting accurate conclusions based on many past studies of the same phenomenon.[3]

In Chapter II, the Navy's accession processes are reviewed, including the Delayed Entry Program (DEP), the military's use of educational screens, the trends and costs of first-term attrition, and labor market theories addressing turnover. This review establishes a common frame of reference within which to view the person-job matching process and its consequences. Chapter III looks at the effectiveness of RJPs using studies discovered during the literature review. These studies are examined in the context of their similarity to the military processes described in Chapter II. Although only the military-specific cases are discussed in detail, the meta-analyses are cited for their ability to convey large-scale estimates of effectiveness in a succinct manner. Chapter IV presents the conclusions of the thesis. Recommendations for follow-on work are provided, and an initial RJP construct is proposed in Chapter V.

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[3] See "A Meta-Analysis of the Correlates of Role Conflict and Ambiguity," by C. D. Fisher and R. Gitelson, 1983, *Journal of Applied Psychology, 68*, pp. 321-322, for a comprehensible discussion of meta-analytic theory.

II. BACKGROUND

A. A BRIEF HISTORY OF EDUCATIONAL SCREENING

In *Screening for Service* (Eitelberg, Laurence, and Waters, 1984), the authors refer to a scene from the 1939 film classic, *The Wizard of Oz*. In this scene, the Scarecrow, having reached the Emerald City, is told by the Great and Powerful Oz:

> Why, anybody can have a brain, that's a very mediocre commodity. Back where I come from we have great universities, seats of great learning where men go to become great thinkers. And when they come out they think deep thoughts, and with no more brains than you have. But they have one thing you haven't got: a diploma.

It is worth noting that the *symbolic* value of a diploma is as important to applicants for military service today as it was to the Scarecrow in 1939. Laurence (1997) credits research conducted by Dr. Eli Flyer in the late 1950s with enlightening military manpower researchers on the link between high school graduation and the decreased risk of attrition. With this realization, high school graduation status became a formal part of the military's selection strategy in the 1960s. Decades of research have since established the importance of the high school diploma, not as a measure of intellectual capacity or educational knowledge, but as an indicator of "stick-to-it-ive-ness."

Indeed, the same characteristics that combine to ensure that a person successfully completes the first 12 years of formal schooling indicate a high probability of successful completion of at least the first term of enlistment. What is less well known is exactly what those characteristics are, how they are interrelated, or how they may be more

exactly measured. The authors of *Screening for Service* effectively capture this aura of uncertainty with their suggestion that:

> Education level evolved as a screening tool mainly because of its recognized value in predicting a new recruit's chances for "adapting to military life." The personal attributes that allow or encourage certain teenagers to follow through and finish high school--whether maturity, motivation, ambition, strength of character, determination or persistence, or, as some contend, the ability to tolerate boredom and routine—apparently help to make them more successful members of the nation's military (Eitelberg et al., 1984).

Whatever the case, high school graduates do have a significantly lower attrition rate for the first term of service than do non-graduates. Estimates of the degree to which the attrition risk is reduced vary, largely as a result of the differences in explanatory variables and estimation techniques between models. The proliferation of alternate credentials has also complicated estimation. In general, though, the argument for preferential recruitment of HSDGs has a great deal of validity—to a point. A 1997 analysis of thirty-six month attrition for Navy enlistees between 1988 and 1993 reveals that high school graduates had an attrition rate of 28.7 percent, compared with 49.0 percent for holders of a high school equivalency certificate and 53.0 percent for non-graduates (Laurence, 1997). The results of this analysis of observed attrition rates by education credential, service, and tier placement[4] are summarized in Table 2.1, and serve to illustrate the differential effect of the high school diploma in comparison with its alternatives.

[4] The three tiers represent, in decreasing priority, the military's preferences for education level. Technically, any credential within the same tier has equal value.

Table 2.1 Thirty-six Month Attrition Rates for FY 1988-1993 Non-prior-service (NPS) Accessions by Education Credential and Service.

Tier / Education Credential	*Army*	*Navy*	*Marine Corps*	*Air Force*	*All Services*
Tier 1					
High School Grad	30.4	28.7	28.6	23.4	28.5
College - One Semester	45.5	44.2	41.9	21.0	43.3
- 2 Years or More	23.0	22.6	25.7	16.6	22.3
Adult Education	44.4	46.0	41.3	42.9	44.8
Tier 2					
H. S. Equivalency	49.1	49.0	50.4	37.7	48.7
H. S. Cert. of Attendance/ Completion	44.6	45.9	40.7	19.8	41.6
Occupational Program Certificate[a]	30.5	31.2	46.2	40.8	35.6
Correspondence School Diploma[a]	52.0	33.3	46.1	0.0	44.1
Home School Diploma	61.9	42.9	42.9	- -	46.5
Tier 3					
Less than H. S. Diploma	53.2	53.0	47.6	37.5	52.7

[a] These two credential types should be interpreted cautiously because of small sample sizes. Number of recruits in these categories ranged from 5 Correspondence School Diplomas in the Air Force to 141 Occupational Program Certificates in the Navy.

- - Entry omitted due to coding confusion.

Source: Adapted from J. H. Laurence, *Does Education Credential Still Predict Attrition?* Paper presented at the 105th Annual Convention of the American Psychological Association, Chicago, IL, August, 1997. The original source is DMDC.

Keep in mind, though, that the overall attrition rate of approximately 30 percent is almost exclusively attributable to the high percentage of HSDG recruits who comprise the force. In other words, if almost all enlistees are HSDGs, then, by definition, they are responsible for almost all first-term attrition. This observation begs the question: Is 30 percent the "natural" rate of attrition and one that the Department of Defense (DoD) is condemned to tolerate; or, could other measures be taken to supplement the effectiveness of the high school diploma, and improve the screening process, such that only the most committed recruits are permitted entry?

If completion of high school is an indication of adaptability, then a measure of aptitude is also needed. For this, specialized tests or test composites, such as those on the

Armed Services Vocational Aptitude Battery (ASVAB), and the Armed Forces Qualification Test (AFQT) are used. Introduced in July, 1950, the AFQT was intended from the outset to be used as a screening device in conjunction with the reinstitution of the Selective Service draft. Bernard Karpinos (as cited in Eitelberg, et al., 1984) relates that the AFQT was developed and fielded for the purpose of both (a) measuring the "examinee's general mental ability to absorb military training within a reasonable length of time, so as to eliminate those who do not possess such ability;" and (b) providing "a uniform measure of the examinee's potential general usefulness in the service, if qualified on the tests."

The AFQT has, of course, evolved throughout the years since its introduction. Over the past 40 years, the individual services have also instituted a variety of supplementary tests to augment the outcomes provided by the AFQT. On January 1, 1976, the ASVAB was introduced DoD-wide as the single test battery for both selection and classification. The ASVAB did not replace the AFQT, but merely incorporated its components within a larger testing instrument. Of the ten subtests that comprise the ASVAB, four—Arithmetic Reasoning, Mathematics Knowledge, Word Knowledge, and Paragraph Comprehension—are combined to derive the AFQT score. The test scores obtained from the AFQT reflect population percentiles of measured aptitude.

Figure 2.1 shows the categories that have been derived by the Navy to indicate preferences in recruit educational and aptitude attainment. Using the high school diploma as a proxy for attrition risk, and the AFQT score as a proxy for successful training outcomes, these categories were developed to rank the desirability of different

recruits. Throughout the services, the preferred recruit is an "A-cell" applicant. Commonly called "high-quality" recruits, these people have both a high school diploma and have an AFQT score in the upper 50th percentile (category IIIA or above). As indicated by the "B-cell," non-high school graduates must score in the upper half of the AFQT to enlist. Despite the apparent implications of the matrix, applicants from the "Cu-cell" are preferred to those from the "B-cell," since the high school diploma is valued more heavily than are the higher AFQT scores required of "B-cell" applicants.

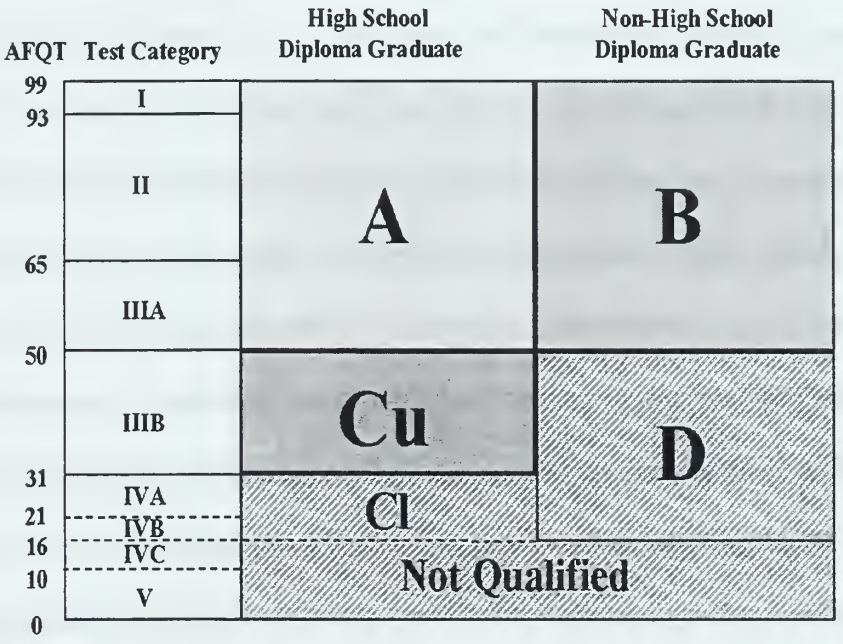

Figure 2.1 Navy Recruit Quality Matrix.

Source: Commander, Navy Recruiting Command (CNRC), 1998.

By law, the services cannot accept any applicants with an AFQT score below the 10th percentile (Cooke and Quester, 1992), and people with AFQT category IV scores (10th to 30th percentiles) are normally ineligible for enlistment regardless of high school

diploma status. Non-high school graduates are allowed to enlist in very limited numbers, but must have relatively high AFQT scores (B-cell), and show proof of previous employment success or a family connection to the Navy. In 1997, up to 5 percent of the Navy's recruiting quota was reserved for non-high school graduates (Burlage, 1997).

These screening measures—HSDG status and AFQT score—have come to define the military selection and screening process. Because these measures are based on very large numbers of individual observations taken over a period of many years, they have evolved into a reliable method of assessing attrition risk for different categories of applicants. Yet, the very reason that contributes to their predictive consistency may detract from their absolute utility. The use of any screening device that is based on population averages functions as a form of "statistical discrimination" (Ehrenberg and Smith, 1994). In other words, while it may seem more efficient to select people based on their resemblance to the average characteristics of some group, there is an implied risk that equally valuable, but less obvious, individual merits may be overlooked.

The military has experimented with compensatory screening models (CSMs) that rely on "biodata"—past biographical information—to attempt to define individual-level factors that could compensate for the weaknesses of traditional educational screens. The power of biodata is thought to exist in the presumption that "the best predictor of future behavior is past behavior" (Edwards, McBride, Waters, and Laurence, 1993). These models have not found widespread acceptance within the services, however, and the use of educational screens continues to predominate.

It seems, then, that organizations that statistically discriminate run the risk of missing out on applicants who may more than make up for in desire what they lack in talent. Such organizations should be alert to the possibility that the cost of excluding highly motivated, but non-traditional, applicants may exceed the savings generated by statistical screening devices. The apparent inability of the services to reduce attrition below 30 percent, despite their belief in the value of traditional educational screens, may serve as just such an alert, as well as an incentive to continue to look for compensatory methods of screening individuals for the characteristics that define successful military service.

B. THE JOB-MATCHING PROCESS AND ITS COSTS

Evidence suggests that young people—the primary recruiting population for the armed forces—experience a high degree of job mobility. A recent study of wage growth and job mobility among young men determined that, during the first ten years of labor force participation, a typical young man will hold seven of the ten jobs that he will have in the course of his career (Topel and Ward, 1992). Cooke and Quester (1992) cite a 1989 study by Markey and Parks that tabulated male responses to the January 1987 Current Population Survey question, "Were you doing the same kind of work a year ago?" The percentages of young men who reported a transition in employment type are shown by age group in Table 2.2:

Table 2.2 Percent of Young Men Who Reported a Change in Employment Type, by Age Group, 1987.

Age Group	*Percent Reporting Change*
16-19	29.4
20-24	22.2
25-34	11.4

Source: Adapted from T. W. Cooke and A. O. Quester, "What Characterizes Successful Enlistees in the All-Volunteer Force: A Study of Male Recruits in the U.S. Navy," *Social Science Quarterly, 73* (2), 239-251. The original source is a question on the January 1987 Current Population Survey (CPS).

This behavior demonstrates the person-job matching process at work, a process often predicated on imperfect information. People frequently take jobs knowing little of the actual conditions of employment. Once hired, employers and employees concurrently evaluate the job match; if either is dissatisfied, one or the other initiates a quit.

This job-matching process is expensive for both industry and the military, particularly in terms of recruiting and training costs. The Navy Recruiting Command estimates that its recruiting costs range from $2,000 per non-graduate, to $7,000 for a high school graduate with an AFQT score in the upper 50^{th} percentile. They further estimate that 90 percent of these costs are dedicated toward bringing candidates to the point of signing an enlistment contract (Bohn and Schmitz, 1995). Added to this is the cost of basic training, nominally estimated at $8,000 per recruit, with follow-on training for some skills costing in excess of $45,000 (Cooke and Quester, 1992). In 1995, the

Army estimated that it spent an average of over $24,000 per enlistee for recruiting, initial processing, training, and job placement (Martin, 1995).

In aggregate terms, GAO (1997) estimated that, in 1994, DoD invested $390 million (1996 dollars) in enlistees who never made it to their first duty station, because they had separated within the first six months. About 60 percent of this total, or $231.8 million, was spent on enlistees who separated within the first two months (roughly equivalent to the length of basic training). The Navy share of these costs was $126.9 million for six-month attrition, of which $81.1 million (64 percent) represented boot camp losses.

When employees leave an organization, the employer incurs sunk costs in recruitment, hiring, and training. These same costs are then required to attract and train replacements. Further, the replacement employee incurs additional costs in terms of initial lower productivity—the so-called "learning curve." Not only is the replacement initially less productive, but the supervisors' productivity also suffers until the new employee is able to perform at the expected level. The combined effects of extensive supervisory attention and a low initial skill level commonly result in negative net productivity. To illustrate, the typical Navy Electronics Technician (ET) with nuclear power training will spend an average of two years in training, or under supervision, before reaching zero net productivity[5] (Marcus and Quester, 1984). In 1996, the average cost of nuclear power training was estimated to be $100,000 (Lieutenant Commander

[5] Net productivity is the contribution of the trainee to unit output. It is negative if the trainee and the supervisor together produce less than the supervisor would have produced without responsibility for training the individual. Zero net productivity is the point at which the trainee's contributions to output just balance the output lost as result of supervisory efforts.

Tom Wears, USN, personal communication, March 23, 1998). This example is not unique, and serves to emphasize the point that the military model of expensive, front-loaded technical training is especially sensitive to early attrition.

To summarize, the military spends a great deal of money recruiting and training its new entrants. Much of this expense is incurred before recruits ever reach their first operational assignment. Yet, the military's primary recruiting market—young high school graduates with little or no experience in the workforce—may be characterized by high rates of turnover, perhaps caused by uncertainty or imperfect information in evaluating potential job matches. Improvements in matching people with jobs may reduce the training costs associated with early attrition.

C. THEORIES OF SEPARATION BEHAVIOR

Discussions of employee turnover often center on the distinctions between voluntary separations (quits) and those that are involuntary (fires). A "quit" occurs when the employee becomes dissatisfied with the conditions of employment, while a "fire" indicates dissatisfaction on the part of the employer. These are obviously opposite actions, yet they lead to the same outcome. For that reason, it is sometimes difficult to distinguish between the two—a problem familiar to researchers. If they could be adequately isolated, though, the behaviors underlying the outcomes could be more accurately analyzed. Anecdotal evidence suggests that people often have a hidden agenda that camouflages their true intent. In the civilian workforce, for example, voluntary quits usually result in denial of unemployment benefits. To protect their

entitlement, some people may shirk, or otherwise set themselves up to be involuntarily separated, since non-adverse involuntary separation does not disqualify them from receiving such payments.

In the context of military service, voluntary quits are seemingly not an option. Yet, clearly, many who enter service will leave before they have fulfilled their enlistment contract. Because all early discharges are at the convenience of the government, all first-term attrition could technically be categorized as "fires." This would be incorrect, however, since at least some adverse discharges are undoubtedly the end result of a lengthy and carefully orchestrated attempt on the part of the enlistee to initiate the action. A pattern of misconduct that eventually ends in discharge might be characterized as service-initiated, when, in fact, the individual's goal from the outset was to achieve just such a result.

Previous research appears to bear this out. Stolzenberg and Winkler (1983) cite a 1977 study by Greenberg, Murphy, and McConeghy in which it appeared that "some dissatisfied Marine enlistees circumvent legal restrictions on quitting military service by 'harassing' their supervisors with misconduct, thereby inducing early 'involuntary' discharge." A more quantitative approach is evidenced in the results of a Navy study, also cited in Stolzenberg and Winkler (1983). Their synopsis states:

> Guthrie, Lakota, and Matlock (1978), Lau (1979), and Advanced Research Resources Organization (1979) report the impact on terminations from the Navy of an experimental program to allow dissatisfied personnel to terminate before completion of their term of service. Participants in this program were permitted to quit any time between completion of apprenticeship training, and 181 days of active duty, or with six months notice subsequently. After 23 months, attrition was much higher for participants in this experimental program (73 percent) than for members

> of a control group (48 percent). The proportion of honorable to dishonorable discharges was much greater among participants in the experimental program, suggesting that "involuntary" discharges may be induced in the absence of freedom to quit (Guthrie, Lakota, and Matlock, 1978).

GAO (1997), meanwhile, contends that "an enlisted person who exhibits a situational adjustment problem in adapting to military life is separated from the Air Force for a personality disorder, from the Navy for an erroneous enlistment, and from the Marine Corps for failing to meet minimum performance standards." In the final analysis, whether the termination was organizationally or individually initiated may be immaterial. In a general sense, the fact that such separations occur at all, particularly given the consistent frequency of the event, suggests that poor person-job matches are being regularly created. The necessity to prevent such job mismatches is obvious. What is apparently required is a means of improving the amount and quality of information vis-a-vis the contracting parties.

D. A CASE FOR SUPPLEMENTARY SCREENING METHODS

As mentioned previously, numerous studies have been conducted into the causes of, and explanations for, first-term attrition of enlistees. A common theme among these studies is their reliance on primarily econometric methods, the examination of demographic characteristics, such as age, race, education, and socioeconomic status, and economic factors, such as unemployment rate and civilian-military pay differential, for their predictive power in reference to attrition and performance. The general consensus of these studies is that a high school diploma and an above average AFQT score are

effective proxies for both lower attrition risk and higher performance. Yet, as shown in Figure 2.2, Navy attrition trends remain essentially constant despite the upward trending recruitment of HSDGs and A-cell enlistees.

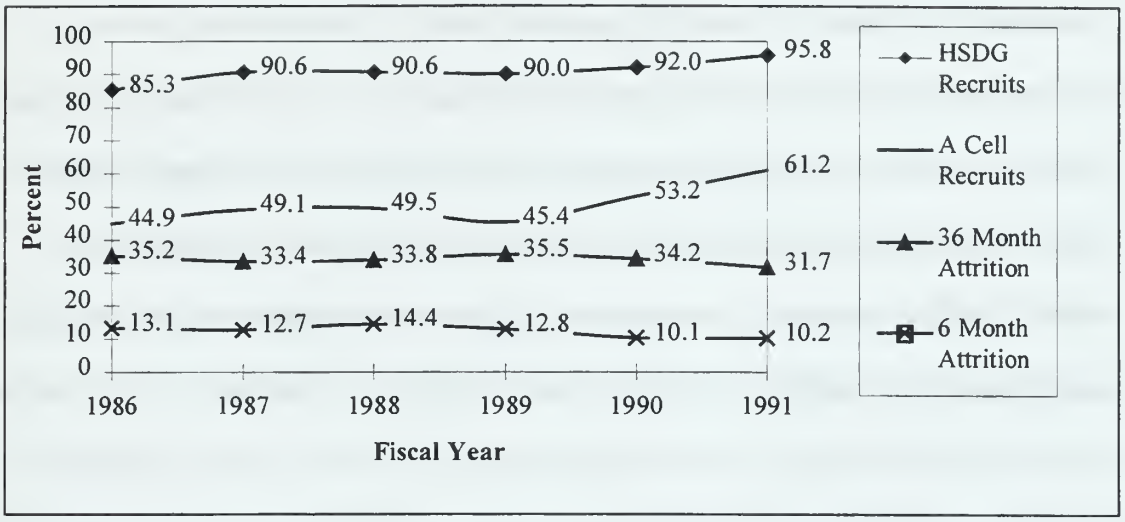

Figure 2.2 Navy First-term Attrition Rates vs. Percentage of High Quality Recruits for FYs 1986-1991.

Source: Recruiting data are from D. Bohn, personal communication, January 14, 1998. Attrition data adapted from GAO, *DoD Could Save Millions by Better Screening Enlisted Personnel*, 1997.

Having econometrically identified the qualities desired in enlistees, what labor market behaviors should the military employ to attract and retain these applicants? Principally, the military utilizes a combination of economic incentives. These incentives include comparatively high entry-level wages, targeted enlistment and reenlistment bonuses, and a wide array of fringe benefits, including medical and dental coverage, discounted shopping privileges, and liberal leave policies. These pay mechanisms have proven effective in attracting recruits and preventing excessive personnel shortfalls in

critical ratings. It is arguable, however, whether these incentives represent the most effective or efficient means by which attrition may be reduced.

Labor market theory offers additional insight into the job selection and retention behavior of individuals. The authors of the textbook, *Modern Labor Economics* (Ehrenberg and Smith, 1994) note that quit rates decrease with increasing job tenure. They attribute this to a job-matching process in which workers do not always have good information about the jobs that they seek. Only after they begin employment do they begin to accumulate factual knowledge about the conditions of work. Ehrenberg and Smith suggest that the connection between job tenure and quit behavior represents a job-matching process in which "workers who realize, after the fact, that they have not made a good match will quit their jobs and seek employment elsewhere. Workers with long tenure will disproportionately be those who believe they have good matches and thus will have low quit rates."

A 1984 study of early military attrition behavior (Buddin, 1984) offers two hypotheses that also seek to explain the underlying causes of attrition. These job-matching hypotheses are as follows.

> *Job-Matching Hypothesis #1: Most job separations occur at low levels of job tenure.*

This is primarily a result of experiencing the job match. If both employer and employee are satisfied with the match, the likelihood of attrition decreases with increasing tenure. On the other hand, poor job matches are quickly identified, and often as quickly acted upon, by one or both parties. Second, increasing job tenure usually implies that a person has a greater investment in firm-specific human capital; in other

words, the skills and training that contribute to success in their present job, but are not necessarily transferable to other jobs (Ehrenberg and Smith, 1994).

> *Job-Matching Hypothesis #2: More uncertainty about the initial employment contract increases the possibility of mismatching and separation.*

Simply, the better informed an applicant is about the conditions of the job in question, the less likely the chance of a poor match. Obviously, the better the person-job match, the less the risk of dissatisfaction and eventual attrition.

Admittedly, these hypotheses do not lend themselves to empirical analysis, as they are heavily dependent upon variables that are not easily measured. Nonetheless, they provide a critical frame of reference for evaluating alternative counter-attrition strategies.

E. A REVIEW OF THE ACCESSION PROCESSES

1. Recruiting

As of 1998, the Navy currently recruits to a predetermined level of about 56,000 people per year. As previously mentioned, the preferred recruit is a HSDG with an above-average score on the AFQT. The ease with which recruiting targets are met depends on a variety of factors, some of which are certainly beyond the control of the individual recruiter, or even the Commander, Navy Recruiting Command (CNRC). For example, the Navy Recruiting Command more or less directly controls the number of recruiters in the field and the size and application of the advertising budget. However,

CNRC can only react to the economic impacts of national and local unemployment rates, or the relative parity of military to civilian pay.

In tough recruiting markets, standards may be arbitrarily lowered to meet the Navy's demand for new recruits. When the supply of potential enlistees is more plentiful, the reverse is true. Meeting these quality and quantity standards is the primary goal of the individual recruiter. As a recent example, an article in *Navy Times* noted that recruiters were faced with a potential shortfall of 1,500 enlistees for the first quarter of FY 1998, which began October 1, 1997. In response, recruiters were given permission to "front-load" their annual quota of "traditional" applicants without high school diplomas—that is, those who have AFQT scores in the upper 50th percentile. Although the article stated that plans to lower enlistment standards had also been discussed, Vice Admiral Daniel Oliver, Chief of Naval Personnel, was quoted as saying, "We will miss in quantity before we miss in quality" (Burlage, 1997). In fact, though, shortly after that article was published, the Navy began admitting up to 1,000 non-high school graduates with AFQT scores in category IIIB—the 31st to 49th percentiles—a target population normally avoided (personal communication, Captain W. S. Wolff, USN, December 18, 1997). Officials have also discussed a plan to allow the entry of some HSDGs with AFQT scores below the 31st percentile, the current cutoff point for enlistment (personal communication, D. Bohn, January 14, 1998). To compensate for the lower overall AFQT composite, these applicants must have a high, specific score on a particular ASVAB subtest. For example, an above-average mechanical aptitude score on the ASVAB could result in assignment to a mechanically-oriented occupation.

These proposals are a clear signal of the difficulties facing recruiters in the current economy. This reluctant retreat from the traditional "bulwarks" of recruit quality is also indicative of the way in which quality goals may be defined by forces external to DoD. Still, the Navy's reaction to these recruiting problems—and its willingness to consider alternate means of selecting applicants—may indicate that institutionalized attitudes concerning traditional measures of recruit quality are shifting. If so, then exploration into other, less-traditional means of recruit selection and screening may be timely and appropriate.

2. Delayed Entry Program

In 1960, the armed forces instituted the DEP as a means of assisting military recruiting by providing individual draft deferments of up to 4 months (Kearl and Nelson, 1992). Since that time, the DEP has been used as a vehicle by which the services manage the flow of enlistees into basic training or, for the Navy, Recruit Training Command (RTC) and subsequent training or operational assignments. Although originally intended and utilized as a "queuing" device, the DEP also has "evolved into a low-cost marketing tool to help recruiters penetrate the high school market" (Bohn and Schmitz, 1995). Entrants into the DEP are tested, screened, and classified. Many are then provided a guaranteed reservation for training in the career field of their (qualified) choice.

Participation in the DEP is essentially a one-sided contract that favors the individual. A potential enlistee's "reservation" is held with merely a statement of intent to enlist. DEP lengths may generally be as long as 12 months, depending upon the availability of advanced training opportunities and the desires of the individual.

Nominally, however, even direct-entry enlistees spend at least 72 hours in DEP, awaiting the results of blood tests (R. L. Brummit, personal communication, February 10, 1997).

Research suggests that the risk of DEP attrition increases with longer DEP lengths (Kearl, Horne, and Gilroy, 1990). In a comparison of high school seniors and people in the workforce, Bohn and Schmitz (1995) found that seniors were in the DEP about twice as long (278 days versus 132), and quit at a greater rate (21.4 percent versus 14.2) than did entrants from the workforce. The fact that people in the DEP quit is not surprising, as they may continue to evaluate current employment (or other offers), the qualities of which are more clearly known, against the lesser-known circumstances of their active duty reservation. Although entry into the DEP constitutes a bona fide legal commitment on the part of the enlistee, the services have chosen not to enforce the contract for those who elect to leave the program. A recent Navy study revealed that high school seniors in the DEP quit before entering active duty at a rate of 21.4 percent. Of those persons entering from the work force, 14.2 percent changed their mind before reporting to boot camp (Bohn and Schmitz, 1995). In the era of the All-Volunteer Force, DEP attrition, while undesirable, is not uncommon.

Longer DEP lengths are not all bad, though. These same studies have found an interesting complement to the higher quit rates of long DEP lengths in that the longer a person "survives" in the DEP prior to entry, the lower the risk of early active-duty attrition. For example, Bohn and Schmitz (1995) also found that HSDG recruits with AFQT scores in the upper 50^{th} percentile who have no time in the DEP have an attrition probability of 26 percent within the first two years of service. Conversely, for equivalent

recruits with nine months in the DEP, the two-year attrition risk decreases to 17 percent. The authors hypothesize that this a function of the recruit's commitment to military service. That is, a person who is willing to commit to a wait of several months before entering active duty is apparently more committed to succeed once military service begins.

The DEP, as it is currently structured, is little more than a waiting line for entry. After the initial program entry requirements have been met—testing, medical examination, and selection of occupational choice—members may have very little interaction with recruiters until they actually report for active duty. This observation suggests that the DEP may be an opportune time to begin the socialization of potential recruits, by exposing them to the expectations and traditions of their new employer. Early organizational socialization may leverage the increased commitment hypothesized above by Bohn and Schmitz (1995), resulting in more favorable outcomes upon commencement of active duty.

F. CONCLUSION

DoD has developed a highly evolved and carefully crafted screening process based upon educational achievement and measures of demonstrated aptitude. Faith in this system is indicated by the services' investment in primarily HSDG applicants, in particular those who are categorized as "A-cell" recruits. Yet, this steadily increasing investment in quality (as currently defined) has had no apparent effect on the attrition behaviors of a workforce where one of three new employees fails to complete the initial

term of enlistment. The loss of these human resources is expensive, even for an organization with a $24 billion personnel budget.[6] Moreover, even the best estimates of attrition-related costs are understated; they fail to account for the time, energy, and administrative or legal costs involved in pursuing early separations to conclusion. Despite the efforts of many talented researchers who have tackled the attrition problem, much remains unknown. It certainly appears that the HSDG model, although powerful, is failing to sufficiently capture the myriad reasons and complex interrelationships that underlie the stay/quit decision. Solutions to the problem of first-term attrition may lie in supplemental selection and screening criteria. An examination of other theories that may help explain how successful person-job matches are formed is necessary and appropriate. The following sections address one such theory, that is, providing applicants with a realistic exposure to the conditions of work and lifestyle that accompany their decision to accept an offer of employment from the Department of the Navy.

[6] Budget figure represents FY 1999 projections and includes Navy and Marine Corps, active and reserve components.

III. REALISTIC JOB PREVIEWS

A. REALISTIC JOB PREVIEWS DESCRIBED

Many employers have turned to realistic job previews (RJPs) as a means of improving the person-job match and thus reducing turnover. An RJP is a means by which applicants, or recent hires, are exposed to the requirements of their new job. As opposed to the interview process, which is often used as a means of selling the position, RJPs do not merely emphasize the positive aspects. Rather, they are intended to give the candidate a more balanced view of the job. This includes exposure to characteristics of the job that might be considered objectionable. It is reasonable to expect that candidates for any position have convinced themselves of its positive aspects. RJPs, by introducing some of the less desirable job factors, reduce what may otherwise be unrealistic expectations. Applicants who accept a job after having been exposed to both its negative and positive characteristics may demonstrate a greater degree of commitment to success in their new position. It follows that the person-job match should be improved as a result.

The following sections examine the hypothesis that RJPs result in better person-job matches, as evidenced by lower turnover. This is accomplished by examining the results of previous research within the context of the accession and initial training processes of the Navy. The studies presented were selected specifically for their relevance to these processes, in hopes that they may offer a new perspective on the traditional methods by which the Navy selects, trains, and socializes its new entrants.

B. RETENTION AND PERFORMANCE EFFECTS

1. A Brief Review of Previous Meta-Analytic Research

Extensive research has been conducted into the efficacy of RJPs as they relate to turnover. Among this body of work is a collection of meta-analyses that are intended to provide generalizable results obtained from a weighted comparison of many individual studies. In 1985, McEvoy and Cascio conducted a review of 15 RJP experiments involving a total sample size of 5,250 participants. The results of their analysis indicate that RJPs reduce turnover rates by approximately 9 percent. It was their contention that a 9-percent gain was rather modest, and they suggested that "managers might do well to look elsewhere when seeking turnover reduction strategies to implement prior to hiring" (McEvoy and Cascio, 1985). This comment, however, should be taken in the context that they concurrently conducted a meta-analysis of five job-enrichment studies. In comparative terms, the results of the concurrent study indicated that job-enrichment strategies appeared to be twice as effective as RJPs in reducing turnover. One item of particular interest in their study was a tabulated presentation of the 15 studies that were used for the meta-analysis. An abbreviated version of their presentation is reproduced below, as Table 3.1. Examination of the studies in Table 3.1 reveals that seven of the fifteen reported statistically lower turnover for the experimental or preview group. Two of the studies reported higher (but insignificant) turnover for persons exposed to an RJP.

Table 3.1 Summary of Turnover Rates (Percent) for Individual RJP Studies.

Study	*Subjects*	*Assignment Method*	*Time Period (months)*	*Turnover Rate*		χ^2 *Significance*
				Preview Group	*Control Group*	
Colarelli (1984)	155 Bank Tellers	Random by Group	3	30.9	32.8	(ns)
Dean & Wanous (1984)	249 Bank Tellers	Random by Group	10	45.5	37.9	(ns)
Dugoni & Ilgen (1981)	119 Super-market clerks	Random by Group	4	13.0	22.0	(ns)
Farr, et al., (1973)	160 Sewing machine operators	Random by Individual	1.5	16.3	25.0	(ns)
Horner, et al., (1979)	678 Marine recruits	Random by Group	12	22.4	33.1	(.01)
Ilgen & Seely (1974)	468 West Point cadets	Random by Individual	2	6.0	11.5	(.05)
Macedonia (1969)	1254 West Point cadets	Random by Individual	12	8.7	13.9	(.01)
Raphael (1975)	160 Life Insurance agents	Unknown	12	48.0	86.0	(.001)
	187 Life Insurance agents	Unknown	12	60.0	87.0	(.01)
Reilly, et al., (1981)	717 Phone service reps	Random by Individual	6	29.0	27.2	(ns)
Wanous (1973)	71 Phone operators	Random by Individual	3	38.0	50.0	(ns)
Weitz (1956)	474 Life Insurance agents	Random by Group	6	19.0	27.0	(.05)
Youngberg, (1963)	404 Life Insurance agents	Matched Control Group	6	29.0	42.8	(.01)
Zaharia & Baumeister (1981)	94 Mental Hospital technicians	Random by Group	9	54.0	60.0	(ns)
	60 Mental Hospital technicians	Random by Group	9	36.0	49.0	(ns)

Source: Adapted from G. M. McEvoy and W. F. Cascio, "Strategies for Reducing Employee Turnover: A Meta-Analysis," 1985, *Journal of Applied Psychology, 70,* 346-347.

Another example, and one that is frequently cited in the literature, is a 1985 study by Premack and Wanous. These authors conducted a meta-analysis of 21 RJP experiments (with a total sample size of 6,088 observations), many of which were also included in the work of McEvoy and Cascio (1985). Despite the use of similar meta-analytic techniques, the authors noted several differences between the two efforts. Addressing the issue of content overlap, Premack and Wanous state that their study is 40 percent larger since they included seven studies not covered by McEvoy and Cascio. Premack and Wanous also excluded a "secondhand" report of the two Raphael studies because these were considered to be neither experiments nor bona fide RJPs. The authors also criticized McEvoy and Cascio for using only the longest available follow-up period to calculate attrition, when more than one point in time may have been available. Another contrast in methodology is noted in that Premack and Wanous chose to concentrate on the most realistic of the previews if more than one type of RJP group was mentioned in the source literature.[7]

The results of this meta-analytic study suggested that RJPs are effective, albeit modestly, in reducing turnover. Additionally, RJPs appear to increase the drop-out rate among job candidates—an effect that the authors contend enhances self-selection behavior. The study also included a table that illustrated the effects of RJP on hypothetical job survival rates and the cost savings possible from using RJPs. The survival rates used by Premack and Wanous—low, medium, and high—are intended to

[7]Premack and Wanous did not discuss what criteria they used to determine the degree to which one preview was considered more realistic than another for between-group comparisons.

illustrate the relative effectiveness of RJPs in different situations. The original table was calculated using a somewhat arbitrary 1984 estimate of the $2,800 replacement cost for bank tellers. Their estimate has been modified here to reflect recent Navy estimates of recruiting and training costs, and is presented as Table 3.2.

Table 3.2 Estimating Employee Replacement Cost Differences With and Without an RJP.

Measure	*Job Survival Rate*		
	Low	*Medium*	*High*
Mean survival rate without an RJP	.20	.50	.80
Estimated survival rate with an RJP	.248	.560	.848
Percentage increase in survival rate[a]	24%	12%	6%
Number of recruits needed to retain 10,000 at the mean survival rate	50,000	20,000	12,500
Annual replacement costs at $15,576 per recruit[b]	$778.8 Million	$311.5 Million	$194.7 Million
Number of recruits needed to retain 10,000 at the estimated survival rate	40,323	17,857	11,792
Estimated annual replacement costs	$628.1 Million	$278.1 Million	$183.7 Million
Estimated cost savings using RJP	$150.7 Million	$33.4 Million	$11 Million

[a] This figure represents the percentage point difference in turnover between the survival rate with and without an RJP (i.e., .56 is a 12-percentage point increase in survival over .50).
[b] Replacement cost estimates are from D. Bohn and E. Schmitz, *Delayed Entry Program Policy: Reducing Personnel Costs Through Efficient Planning,* by D. Bohn and E. Schmitz, 1995, Commander, Navy Recruiting Command, and include recruiting, and basic and initial skill training for the typical recruit.
Source: Adapted from S. L. Premack and J. P. Wanous, "A Meta-Analysis of Realistic Job Preview Experiments," 1985, *Journal of Applied Psychology, 70*, 706-719.

As Table 3.2 shows, RJPs apparently have a differential effect that is dependent upon the initial survival rate. In particular, these results suggest that RJPs appear to work

retention rates during an initial probationary period were lower among prior-service officers who were given the preview. Still, retention was higher for officers with prior corrections experience than for those with no prior experience in the preview group, once permanent status was achieved. In keeping with the authors' expectations, turnover rates were lower for persons without prior experience who achieved permanent status and were exposed to the preview (Meglino et al., 1993).

Table 3.3 Attrition Rates (Percent) By Employment Status, Prior Correctional Officer Experience, and Job Preview Category.

Employment Status	*Overall*	*Preview*	*No Preview*
Total Sample			
All New Hires	43.6	43.0	44.4
Probationary	51.0	53.5	47.7
Permanent	34.2	30.1	40.0
No Prior Correctional Officer Experience			
All New Hires	42.6	41.1	44.5
Probationary	48.5	48.4	48.7
Permanent	35.1	32.9	38.5
Prior Correctional Officer Experience			
All New Hires	49.1	53.1	43.5
Probationary	64.5	76.2	40.0
Permanent	29.2	9.1	46.2

Source: Adapted from "Effects of Previous Job Exposure and Subsequent Job Status on the Functioning of a Realistic Job Preview," by B. M. Meglino, A. S. DeNisi, and E. C. Ravlin, 1993, *Personnel Psychology*, 46.

Because almost all new military entrants have no previous experience, this result is probably the most clearly transferable to the military hiring model. Although this

particular study did not detect statistically significant differences in retention between groups, it serves to underscore an important lesson, and one that we are often condemned to re-learn, that is, "no magical cures will compensate for jobs which are inherently undesirable" (Meglino and DeNisi, 1987).

All military recruits enter their respective services through some program of basic training. It is at this point that the ability to opt out of the job becomes more difficult, due to the contractual obligation accompanying this training. This contract makes the option to quit considerably more difficult and complicated. Nonetheless, at least some recruits are reportedly aware of methods that may be used to facilitate their early (and honorable) discharge from recruit training (Meglino, DeNisi, Youngblood and Williams, 1988).

The primary purpose of basic training is to inculcate new recruits in military values, traditions, discipline, and decorum. This training is designed to be stressful, and it functions as a screening device to identify persons who cannot meet the rigorous demands of military service. Basic training is also designed to provide recruits with a general set of skills that prepares them for immediate assignment to an operational unit, or more commonly, further training. In this type of post-hire environment, Wanous (1979), and also Miceli (1983), are cited by Phillips and Gully (1997) for their suggestion that a more appropriate term for RJP is "realistic socialization," since the opportunity to select out of the application process no longer exists. This argument would appear to be especially germane to enlistees who are now contractually bound. Semantics aside, military-specific research into the effects of post-hire RJPs has been conducted.

In 1979, a study of 678 male Marine recruits undergoing basic training at the Marine Corps Recruit Depot at Parris Island, South Carolina provided some insight into the impact of RJP on attrition and performance (Horner, Mobley, and Meglino, 1979). An RJP known as PIRATE, or Parris Island Recruit Assimilation Training Exercise, was jointly developed by the Parris Island Training Support Center and researchers from the University of South Carolina. The format was an 80-minute video, including realistic footage from all phases of recruit training. The video used interviews and voice-overs from a cross-section of recruits and drill instructors (DIs) to furnish accurate information, provide role models, and demonstrate coping skills. During the development of the video, it was described that:

> Interviews were conducted with poor, average, and good performers. Some who had dropped out were also interviewed. ...The RJP film was based primarily on information gained from these interviews. Those areas that the recruits said they wished someone had told them about early in their training were included. Recruits were shown going through some of the training that was perceived to be the greatest cause of concern among recruits. Voices of the recruits and their instructors were played over the picture. The voices explained how the recruit should react to certain situations and the voices gave advice on how to cope with the training. ...The role models chosen for the film were not pre-selected for voice or appearance. Most of the scenes were shot as the recruits were actually undergoing the training. The good as well as the average and poor performers were depicted in the film (Horner et al., 1979).

Recruits were randomly assigned to either the preview group, a "placebo group" that watched a series of three traditional Marine Corps films, or one of two control groups, with one of each type of group represented within each of three separate training battalions. The experimental design also called for the administration of a series of questionnaires. The primary difference between the groups was related to the number of

surveys in which they participated. The placebo group received the entire treatment with the exception of the actual film, while the control groups differed primarily in the number of questionnaires administered (Horner et al., 1979).

The RJP was presented on the second full day of training and was subject to 21 separate hypotheses, including reduced attrition and higher performance. The experiment was conducted in April of 1979, which proved to be especially interesting. During the summer months, average education level—a measure of recruit quality—increases as the surge of high school graduates reports for training. Demographics for the experimental group were compared to the total population of male recruits entering Parris Island during late 1977 through mid-1978. In comparison with this population, the experimental sample was representative in terms of age, race, and AFQT. However, because the recruits studied were selected in April, a time when arrivals tend to have lower average education levels, the experimental group had an average of 11.3 years of education, (statistically) significantly less than 11.7 years of education for the total population. Of particular interest, the experimental group was comprised of significantly fewer high school graduates, 56.2 percent, than the population average of 75.5 percent.

Recruits who were previewed on what to expect during recruit training demonstrated lower attrition at three months than did the placebo or control groups. Although the three-month results shown in Table 3.4 were not statistically significant, they were in the right direction and seemed to support the hypothesis of reduced attrition (Horner et al., 1979).

Table 3.4 Marine Recruit Attrition Rates (Percent) at Three Months by Experimental Group and Battalion, 1977-1978.

		Treatment	*Placebo*	*Control I*	*Control II*	*Total*
Battalion A	Sample Size	50	49	52	41	192
	Separations	8	8	11	10	37
	Percent	16.0	16.3	21.2	24.4	19.3
Battalion B	Sample Size	62	64	61	65	252
	Separations	3	10	8	5	26
	Percent	4.8	15.6	13.1	7.7	10.3
Battalion C	Sample Size	62	61	53	58	234
	Separations	7	9	7	7	30
	Percent	11.3	14.8	13.2	12.1	12.8
Total	Sample Size	174	174	166	164	678
	Separations	18	27	26	22	93
	Percent	10.3	15.5	15.7	13.4	13.7

Source: Adapted from S. O. Horner, W. H. Mobley, and B. M. Meglino, "An Experimental Evaluation of the Effects of a Realistic Job Preview on Marine Recruit Affect, Intentions and Behavior," 1979, Arlington, VA: Office of Naval Research.

More importantly, though, attrition rates for the preview group were (statistically) significantly lower at both the six-month and one-year points. Table 3.5 displays the cumulative attrition rates of the preview group at the six-month and one-year points in comparison with the control groups. The reduced turnover noted for the preview group at six-months was not significant when compared with that of the other groups. However, the attrition differences were found to be significant when comparing the preview group with the combined results of other groups. For the measure taken at the one-year point, attrition risk was found to be significant when compared with the three control groups individually or collectively. Horner et al. (1979) concluded that the RJPs not only affected turnover, but that the effect "became more pronounced with time."

In a self-admittedly subjective line of reasoning, the authors suggested that "perhaps the initial impact is to salvage those marginal newcomers who make it through the hard times and then become less likely to leave as things get better" (Horner et al., 1979).

Table 3.5 Six-Month and One-Year Cumulative Attrition by Experimental Group and Attrition Point, 1977-1978.

Attrition Point	*Treatment*	*Placebo & Controls*	*Total*
Six-Month Attrition			
Survivors	148	384	532
Cumulative Separations	26	120	146
Percent	14.9	23.8	21.5
One-Year Attrition			
Survivors	135	337	472
Cumulative Separations	39	167	206
Percent	22.4	33.1	30.4
Total Sample Size	174	504	678

Source: Adapted from by S. O. Horner, H. Mobley, and B. M. Meglino, "An Experimental Evaluation of the Effects of a Realistic Job Preview on Marine Recruit Affect, Intentions and Behavior," 1979, Arlington, VA: Office of Naval Research.

Differences in performance were also noted between groups. Performance was assessed using two separate measures. The first was a composite score of graded evaluations of military skills known as Military Skills Marks (MSMs), believed to be an objective and comprehensive criterion. The second measure was indicated by the number of recruits who were required to repeat some portion of the training, a process referred to as "recycling" (Horner et al., 1979).

Group-wise comparison demonstrated higher performance for the preview group, with the placebo group having the lowest performance scores as measured by the MSMs, although these differences were insignificant. When the preview group was individually compared with all other groups combined, significantly higher performance was observed. There were, however, no significant differences between the experimental group and the control groups in the number of recruits who were recycled. This was believed to be due to problems associated with using recycling as a performance measure—recruits are apparently sometimes recycled for reasons unrelated to performance. This is at least partially due to the subjective nature of the measure, as only one or two drill instructors can initiate a recycling action.

In their conclusion, Horner et al. (1979) offered a simple methodology by which to calculate the cost-savings achievable from reductions in attrition. Using their estimate of the 4.6 percent reduction in boot camp attrition noted for the preview group, they suggest that the potential savings are (4.6 percent x N) x basic training cost, where N is the annual number of recruits participating in basic training. Converting this cost equation into current dollars and number of recruits involves multiplying their 4.6 percent estimate by the Navy's FY 1998 recruiting goal of about 56,000 recruits (D. Bohn, personal communication, January 13, 1998), and multiplying again by the $12,077 GAO (1997) estimate of the Navy's investment in each enlistee by the completion of boot camp. The total theoretical savings of this computation is just over $31.1 million—a figure that represents a 38 percent reduction in the estimated $81.2 million cost of Navy boot camp attrition (GAO, 1997).

Shortly after the report by Horner et al. was released, and possibly based on its results,[8] the Navy developed and fielded its own RJP study (Lockman, 1980). The RJP experiments were conducted first at Recruit Training Center (RTC) Great Lakes, and later at RTC San Diego. At the conclusion of the two experiments, the results were compared for both absolute and relative effects. Each experiment lasted for six weeks, during which every other company of incoming recruits saw an RJP videotape. The report does not elaborate on the content of the RJP video, except to say that "its purpose was to provide recruits with a realistic picture of what they could expect during recruit training" (Lockman, 1980). During the study period, 2,607 recruits at Great Lakes, and 2,051 recruits at San Diego were assigned to either the preview or no-preview groups. In all, 1,342 recruits at Great Lakes were presented the RJP, compared with 1,049 at San Diego.

The methodology of the Lockman (1980) study attempted to determine the relationships of seven variables—years of civilian education, AFQT, age, race, DEP participation (yes or no), class of service (regular or reserve), and RJP viewer status (yes or no)—upon recruit training attrition. Interactions of RJP viewer status with education, AFQT, and age were also tested for their differential effects. It was believed that, because the (unnamed) Marine Corps study had neglected to account for these demographic variables, the reduced attrition noted for Marine recruits may have been

[8] In the introduction, Lockman cited a Marine Corps study that reported reduced recruit training attrition for viewers of an RJP film. Unfortunately, the cited study was not included in the list of references. Given the dearth of military-specific research into this topic, the timing of the respective reports, and based in part on the description of the methodology used in the unnamed Marine Corps study, this appears to be the report to which Lockman was referring. Attempts to contact the author for verification were unsuccessful.

improperly attributed to the effects of the RJP, rather than to the differences in these characteristics.

Between the two RTCs, it was noted that the experimental group at Great Lakes was, on average, one year younger at entry, had slightly lower average AFQT scores, participated in DEP and the reserves in smaller proportions, and demonstrated significantly higher rates of attrition from recruit training. Aside from the absolute differences in attrition between RTCs, results from each experimental group were markedly similar. Presentation of the RJP appeared to have no significant effect on attrition at either location. Attrition for RJP viewers at Great Lakes was 14 percent, slightly higher than the 13.6 percent attrition rate for non-viewers. At San Diego, persons who were presented an RJP were discharged at a rate of 9.4 percent, versus 9.9 percent for those who did not receive an RJP (Lockman, 1980).

In the final analysis, Lockman (1980) concluded that the RJP video did not, in and of itself, predict attrition[9] at RTC. Rather, the traditional screening factors that are currently employed—education, AFQT score, and age—appear to be the best predictors of attrition for enlistees.

It is unclear whether these results are more or less valid than those of the Horner et al. (1979) study of Marine recruit attrition. This report offered very little detail on the content of the RJP offered. Assuming that it was an effective presentation, limiting the measurement period for attrition to RTC only—a period of about eight weeks—neglects

[9] A period of six months was allowed to elapse before the experimental groups were tracked to determine whether or not they had been discharged from recruit training.

the long-term effects of the RJP on first-term attrition. Also, attrition trends at RTC are often cyclical, and may sometimes depend more upon externalities than on the differences in demographic characteristics, or whether or not recruits are exposed to pending training requirements. A comparison with historical trends for each RTC would have been of analytical value.

The results of the Lockman study serve as a reminder that RJPs are somewhat situationally dependent. They require thoughtful insight into the characteristics of the job, an appropriate presentation, and a receptive audience. Whether or not the RJP offered meets these characteristics is potentially an issue. If this is not the case, however, then these results may be an indication that RJPs are simply not the most effective means for reducing turnover in every situation.

A more recent example of military-specific research into the effects of RJPs is evident in the 1988 study of Meglino, DeNisi, Youngblood, and Williams. This experiment was performed with 533 male and female recruits undergoing Army basic training. In a departure from previous work in the field, the methodology consisted of offering a combination of previews—either a reduction preview (designed to reduce overly positive expectations), an enhancement preview (intended to dispel overly pessimistic perceptions of the difficulties of some aspects of training), both previews, or no preview (control group). It was hypothesized that turnover would be lowest for persons who received both previews, followed by the reduction group, the enhancement group, and, finally, the control group (Meglino et al., 1988).

Four companies of Army trainees were used for the study, three of which were composed entirely of men, and the fourth exclusively of women. Each company was composed of four smaller units called platoons. Within each company, each of the platoons was randomly assigned to one of the four experimental groups. Each of the four treatment groups was found to be equivalent on standard demographic measures such as age, race, AFQT score, and education level. The only significant difference among groups was attributable to gender. Although the authors noted that women tend to be discharged prematurely at a rate greater than that of men, separate analyses revealed no treatment-related differences between the genders. Thus, attrition rates for the different groups were reported for the sample as a whole (Meglino et al., 1988).

With respect to the previews, the reduction preview was a 24-minute film that emphasized that the greatest challenges faced by recruits were not related to training events, but in adjusting to Army life—homesickness, lack of privacy, being subject to command authority, and anxiety over relations with the drill instructors and physical requirements. The film also offered strategies for coping with stressful situations.

The enhancement preview, on the other hand, was a 27-minute film that described in some detail the impending training requirements. The film depicted some of the more worrisome events in training, such as firing weapons, using hand grenades, living under field conditions, and gas chamber training. Also included was an accurate presentation of the demands of the daily schedule and the requirements for graduation.

All of the trainees were also asked to complete pre-test, post-test, and follow-up questionnaires as part of the experiment. These were intended to measure such outcomes

as level of initial commitment, job satisfaction, and feelings of trust and honesty. Pretest surveys were administered at the end of the first day of processing. Following exposure to the previews the following day, post-test measures were collected. The follow-up survey was administered five weeks later.

A comparison of turnover rates among the different groups is shown in Table 3.6. Based on results obtained from the pretest surveys, separate estimates were derived for recruits who had reported high levels of initial commitment to the organization (defined as at or above the mean for all recruits who had completed the pretest), as well as for recruits with relatively high AFQT scores (50^{th} percentile or greater).

Table 3.6 Turnover Rates (Percent) for Army Recruits by Preview Group Status, AFQT Score, and Commitment Level, 1988.

		Preview Group		
Sample	***Both***	***Enhancement***	***Reduction***	***Control***
Total	2.5	5.3	13.2	7.8
High AFQT	1.4	4.3	10.2	11.8
High Commitment	0.0	2.6	4.8	10.6

Source: Adapted from B. M. Meglino, A. S. DeNisi, S. A. Youngblood, and K. J. Williams, "Effects of Realistic Job Previews: A Comparison Using an Enhancement and a Reduction Preview," 1988, *Journal of Applied Psychology, 73* (2), p. 263.

In contrast to hypothesized expectations, the group that had received the reduction preview only exhibited the highest rate of turnover. Meglino et al. (1988) attribute this to the fact that the RJP contained more negative information than is usually found in a preview of this type. Evidence to support this argument came from the results of the post-test preview administered to the reduction group. Recruits who had seen only the reduction preview expressed greater levels of anxiety about "getting along with others,

and anticipated lower security, growth, and social satisfaction" than did the other groups (Meglino et al., 1988). The authors also suggest that this outcome may represent a "threshold effect" in which the "beneficial effects of a reduction preview will be diminished or eliminated when the amount of unexpected negative information reaches a level that prompts a substantial number of individuals to refuse employment or to leave the organization" (Meglino et al., 1988). Persons who are most committed to the organization are apparently immune from this effect, according to the authors. In fact, attrition for "high commitment" recruits who were shown the reduction preview is much lower than that for the control group, lending credence to this argument (Meglino et al., 1988).

The attrition rate for high commitment recruits in the control group and high AFQT recruits in general was also somewhat of a surprise. One might expect that recruits with high levels of initial commitment would be the most dedicated to completing basic training. Similarly, more "intelligent" recruits (as indicated by AFQT score) might be thought to have higher levels of reasoning ability that would allow them to "see through" the exaggerated behaviors and discipline that characterize boot camp—contributing to more effective coping mechanisms. The authors suggest that these results may in fact be perfectly reasonable:

> That is, those individuals who are most committed to an organization before they learn the "truth" about their job, may also be those who become the most disillusioned, and therefore more likely to leave, when the job does not live up to their expectations, or when they discover that the organization has been less than truthful. This may also be true for more intelligent individuals.... (Meglino et al., 1988).

One could also make the argument that more intelligent individuals may also be more accustomed to success, as indicated by their higher levels of academic and intellectual achievement, possibly less tolerant of petty annoyances, and more confident of success outside the military.

Clearly, the greatest effect on turnover in this experiment was associated with exposure to both the enhancement and reduction previews. Not only was turnover absolutely lower for this group, but the results were significant regardless of which group, or combination of groups, was used for comparison. These effects were magnified for both high AFQT and high commitment recruits. The increased effectiveness noted for more "intelligent" recruits may be due to higher attentiveness and increased comprehension of the preview content. The high commitment recruits, on the other hand, may have interpreted the previews as a sign of the caring nature of the Army, further reinforcing their decision to enlist.

Ultimately, the results make a strong case for providing a balanced preview to newcomers. Exaggerating either the positive or negative characteristics of a job could have negative repercussions when the true conditions of work are discovered. Such outcomes could include not only higher turnover, but may also involve some loss of credibility for the organization.

C. OTHER EFFECTS

The previous discussions have centered almost exclusively on the relationship between RJPs and job turnover. While this is in keeping with the primary theme of this

thesis, there are other dimensions of RJPs that deserve mention. Careful consideration of the side-effects or opportunities associated with incorporating RJPs into the military hiring process should help clarify the non-quantitative—such as psychological or social—costs and benefits of the action. This section discusses some of the secondary outcomes and considerations related to RJPs.

1. Reciprocity

One of the more interesting conceptual aspects, and one that is rarely highlighted in RJP literature, is reciprocity with regard to evaluating the person-job match. Clearly, the benefits of reduced turnover resulting from RJPs are reciprocal—the organization saves recruiting and training time and money, while the individual, having made a better person-job match, begins to acquire tenure, implying a higher rate of income growth and increased job satisfaction. Still, it appears as though the benefits of improved information concerning the person-job match accrue mostly to the individuals. If provided an RJP, applicants have greater insight to the conditions of work and ideally self-select into jobs for which they are better suited—the employer benefits only indirectly in the form of reduced turnover. Yet, the very process of extending an RJP implies an opportunity for the employer to concurrently evaluate and screen the characteristics of the candidate for the position.

An excellent example of this process of reciprocal evaluation is evident in the hiring practices used in the Georgetown plant of Toyota Motor Manufacturing Kentucky (TMMK). As of August, 1997, the plant had received over 200,000 applications for 7,500 available jobs since it began hiring in 1986 (Maynard, 1997). To ensure that only

the best-qualified applicants are selected from this large pool of candidates, TMMK uses a lengthy and thorough series of screening mechanisms. The Toyota plant also has a Web page that discusses the traits desired in applicants—team skills, problem-solving ability, education, potential, and a desire to learn—traits touted as being more highly valued than prior experience, according to a January, 1998 visit to their site, "what you can expect as a TMMK team member." The site states clearly that "candidates undergo intensive assessment and evaluation to ensure that those hired have the ability and motivation to sustain our tradition of excellence" (Toyota Motor Manufacturing of Kentucky, 1998).

This "intensive assessment and evaluation" process begins with all applicants filling out an initial application, which serves as a low-cost initial screen. Some of these applicants are then provided the opportunity to fill out a formal application and take a written test. The next steps involve participating in up to eight (unpaid) hours of problem-solving sessions and group discussions and submitting to even more written tests. Candidates who remain after this step now participate in the highlight of Toyota's screening process—the "Day of Work." This step involves four hours of (unpaid) simulated assembly-line work, and is designed to identify applicants who have the physical dexterity and problem-solving abilities required of assembly-line workers, as well as the attitude to excel in a team-oriented environment (Maynard, 1997).

Applicants who successfully complete the "Day of Work" are eligible to be interviewed formally, a process that takes approximately one hour. Survivors of the interview process enter the "active consideration pool," where they may wait for up to

two years for an initial job offer, depending on employment opportunities. Once a preliminary offer is made, the applicant undergoes a physical exam, and then meets with placement personnel to determine an appropriate assignment. Finally, TMMK makes a final job offer to the applicant (Maynard, 1997).

Although the use of assessment tests is common in the highly competitive automotive industry, experts say Toyota's process is the most elaborate (Maynard, 1997). TMMK estimates that it costs $2,500 per new-hire to operate the Assessment Center. It feels that the costs of the program are more than justified, however, not only by a remarkably low annual turnover rate of only 3.5 percent, but also by the qualitative successes enjoyed by the organization in its ten years of existence (S. Stone, personal communication, March 6, 1998).

While it seems apparent that better person-job matches are being created, as evidenced by TMMK's relatively low turnover rate, it is equally apparent that the implicit employer-employee contract comes with a greater degree of reciprocal knowledge. The lengthy and taxing hiring process used by TMMK not only provides applicants with a realistic, first-hand view of what to expect as a member of Toyota's workforce, but it also provides TMMK with a summary measure of the candidate's commitment to the job. Although TMMK will screen out many applicants who are willing to see the process through, some will self-select out of the process, a common example being those who head out for their lunch break during the Day of Work and never return. Maynard (1997) cites the example of one woman, who, after asking permission to use the restroom, disappeared—all that was found was her nametag, left on the restroom sink.

2. Timing and Presentation Medium

Evidence suggests that the timing of RJPs—pre- or post-hire—as well as the presentation medium—verbal (face-to-face), audiovisual, or written—appear to have moderating effects on both turnover and performance (Premack and Wanous, 1985; Phillips and Gully, 1997). The use of pre-hire RJPs may strengthen the "self-selection" effect, by discouraging those who are alerted to the potential of a poor person-job match. Job-seekers who continue with the application process after being made aware of the negative aspects of a job are presumed to have more commitment to the job. Because their expectations are more realistic, and correspondingly more likely to be met, it is usually hypothesized that pre-hire RJPs should be associated with lower rates of attrition. In a metaphorical sense, it has been observed that:

> The RJP functions very much like a medical vaccination in its attempt to deflate newcomer expectations. That is, it is designed to prevent newcomer dissatisfaction, rather than reduce it after the fact. The typical medical vaccination injects one with a small, weakened dose of germs, so that one's body can develop a natural resistance to that disease. The RJP functions similarly by presenting job candidates with a small dose of "organizational realty." And, like the medical vaccination, the RJP is probably much less effective after a person has already entered a new organization (Popovich and Wanous, 1982).

Post-hire RJPs, on the other hand, assist in the organizational transition, or socialization, of recruits. Because the information presented is of fairly immediate value to newcomers, they may be more attendant to its content. Post-hire RJPs may also help newcomers develop coping mechanisms that reduce anxiety about the negative aspects of their new job, as well as reduce role ambiguity—the uncertainties surrounding position, responsibilities, expectations, and rewards. Thus, the greatest gains for post-hire RJPs

are hypothesized to be related to increased on-the-job performance (Phillips and Gully, 1997).

A 1997 meta-analysis by Phillips and Gully examined the relationship between the timing of RJPs, and the effects on turnover and performance. The authors concluded that pre-hire RJPs had the greatest impact on reducing turnover. As previously mentioned, pre-hire RJPs were estimated to reduce attrition rates by 6 percentage points—twice the gain of a post-hire RJP. Post-hire RJPs, though, were shown to have a stronger moderating effect of measures of performance. These findings were consistent with their hypothesized expectations (Phillips and Gully, 1997).

The differential effects of the type of presentation medium may be an important consideration. The means by which RJPs are presented have also been linked to turnover and performance. RJPs may be presented verbally, for example, in an interview, or a face-to-face meeting between job incumbents and applicants. Audio-visual methods, perhaps using videocassettes or CD-ROMs, are another available mechanism, and are suitable for use on a larger scale. Written RJPs, in the form of pamphlets or brochures, may also be used.

Because verbal RJPs provide for the opportunity to not only ask questions about the job, but may also include the opportunity to observe and experience, first-hand, the environment and responsibilities of the job, they could be presumed to have an important effect on job acceptance rates and eventual job satisfaction. They have the potential to be rather costly, however, particularly considering the interrupted productivity of the incumbent, in addition to the costs of development.

Audio-visual methods should also be highly effective, as they have the added advantage of offering a carefully scripted demonstration of successful role models and coping mechanisms. Videos are relatively inexpensive to produce, and can be used in geographically dispersed interview and work locations—a plus for many large organizations. One possible drawback, though, is the necessity to ensure that videos are up-to-date, implying recurring expenses for organizations with constantly shifting job responsibilities.

Written brochures or pamphlets have the potential advantage of being able to contain a large amount of detailed information. They are also comparatively inexpensive to produce and distribute. A drawback to written RJPs concerns the requirement of applicants to not only read, but also comprehend, the information contained within.

Premack and Wanous (1985), considering only written and audio-visual RJPs, determined that audio-visual presentations were associated with higher job performance, while written RJPs seemed to have a very slightly negative effect. Phillips and Gully (1997), also determined that audio-visual RJPs were linked to higher job performance, followed by verbal presentations, with written RJPs being the least effective.

3. Attitudinal Effects

Premack and Wanous (1985) described the RJP-related effects of organizational climate as "several related perceptions of the new organization, such as the degree to which it is seen as supportive, trustworthy, honest, or candid in its portrayal of a job to a candidate." It has been commonly hypothesized that presentation of an RJP increases the regard that individuals hold for a prospective employer since the offering of an RJP may

be felt by applicants to be demonstrative of an organization's integrity, concern for employees, or a climate of caring and trust. If true, then presentation of an RJP should lead to such outcomes as fewer thoughts of quitting, greater job satisfaction, and higher levels of commitment to the organization.

Results of research into these hypotheses are mixed. In their study of Marine Corps recruits at Parris Island, Horner et al. (1979) cite Wanous' 1973 findings of an experimental group that was provided a pre-hire RJP reported both significantly fewer thoughts of quitting (considered to be a precursor to turnover) and significant increases in job satisfaction in comparison with the control group. Horner et al. (1979) also cite Ilgen and Dugoni (1977) whose post-hire RJP experiment found increased levels of job satisfaction that, although statistically insignificant, were consistent with the results obtained by Wanous. The results of the authors' own study, however, contradicted these findings—discovering neither increased job satisfaction nor decreased thoughts of quitting among Marine recruits provided with an RJP. The Horner et al. (1979) study did, however, find directionally correct, but statistically insignificant, increases in self-reported levels of coping ability and feelings of trust and honesty toward the Marine Corps (Horner et al. 1979).

Meglino et al. (1988), in their study of the effects of a pre-hire RJP offered to applicants for the position of correctional officer, reported that those who were provided an RJP saw the Department of Corrections as more honest and trustworthy. However, this RJP experiment appeared to have little effect on self-reported levels of anticipated job satisfaction or increased organizational commitment.

Finally, Premack and Wanous (1985) offer a succinct and general summary of the psychological effects of RJPs in their commentary that:

> Specifically, RJPs appear to lower initial expectations about a job and the organization, to increase the number of candidates who drop out from further consideration for a job, to increase initial levels of organizational commitment and job satisfaction slightly, to increase performance (for audiovisual RJPs), and to increase job survival. On the contrary side, RJPs were found to slightly reduce the favorableness of a job candidate's perception about the "climate" of honesty, supportiveness, and trustworthiness in the new organization and the newcomer's ability to cope with a new job. These latter two findings must be interpreted with caution, because they are based on the fewest number of studies and include a much smaller number of people in comparison with other criteria assessed here (Premack and Wanous, 1985).

The results of prior research are somewhat equivocal with respect to the many hypothesized psychological dimensions of RJPs. No clear explanations can be found of "how" RJPs work. These dimensions are important, nonetheless, and awareness of their existence may provide an opportunity to design desired outcomes into an RJP from the outset—ideally leading to improved results.

D. SUMMARY

It is worth mentioning that RJPs of one sort or another are currently enjoying limited use in certain military settings. For example, in 1996, the Navy developed a video that is shown to new recruits who are traveling by bus from O'Hare International Airport in Chicago to RTC Great Lakes.[10] The video depicts actual recruits describing their experiences at RTC, and provides new arrivals with an overview of recruit training. Discussion with RTC officials indicates that this video was originally intended to reduce

stress, including the number of suicidal thoughts and attempts at RTC (Lieutenant R. Snyder, USN, personal communication, February 4, 1998). Although the theme has reportedly been changed to reflect the development of "coping skills," in comparison with the previous, and more negative, theme of "suicide awareness," the video represents a de facto RJP.

To date, no attempt has been made to connect the use of this video with attrition trends at RTC (or beyond). Any such attempt would likely be fruitless anyway, since the RTC training curriculum was completely reengineered at the same time. The ability to isolate the effects of the video, given the numerous simultaneous changes that were implemented, would be difficult at best. Anecdotal evidence suggests that recruits value the ability of the video to mentally prepare them for upcoming training events. This appreciation of the video is consistently expressed in critiques that are completed by all graduating recruits (B. Hoag, personal communication, March 10, 1998).

Both the Marine Corps and the Army have also fielded a pre-hire RJP of sorts. Disturbed by the number of losses at boot camp due to the inability to complete physical training requirements, both services have begun pre-boot camp physical conditioning programs for personnel in DEP. Marine recruiters are now required to train weekly with their enlistees under a program called "Welcome Aboard." This program not only stresses physical conditioning, but also emphasizes the Navy and Marine core values of "honor, courage and commitment." The Army program requires that recruiters conduct fitness exercises at least monthly, with each training session lasting no more than two

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[10] RTC Great Lakes is currently the Navy's only training base for recruits.

hours (Bowman, 1997). Although these conditioning sessions are targeted toward very specific outcomes—the ability to complete, uninjured, the physical requirements of basic training—they may offer some of the benefits of more comprehensive RJPs, such as enhancing coping skills and aiding the socialization process.

Also, in 1991 the Army fielded an RJP for Special Forces candidates that is somewhat of a hybrid—post-hire in the sense that applicants are already on active duty, and pre-hire in the sense that Special Forces is a highly selective, voluntary organization that applicants must apply to join. This RJP was presented in booklet form to personnel interested in joining and emphasized pre-conditioning—similar to the Army's current program for candidates in the DEP. Noting the positive effects this booklet had on training completion rates—an improvement of 7-15 percentage points—the booklet was updated in 1994 (U. S. Army Research Institute for the Behavioral and Social Sciences, 1998a). The updated version was designed to provide more detailed and realistic information to soldiers and their families concerning life in Special Forces. Current proposals to improve the existing RJP include recommendations that recruiters advise candidates to practice skills that will be required as a member of Special Forces—tasks such as long-distance hiking while navigating by day and night. It was also recommended that recruiter incentives be tied to the number of candidates who successfully complete Special Forces training, rather than the number that the recruiter can incite to show up (U. S. Army Research Institute for the Behavioral and Social Sciences, 1998b).

These limited pre-enlistment exposures to some of the demands of military service may represent a gradual movement in the direction of providing RJPs to all enlistees prior to beginning active duty. Certainly, they provide an opportunity for further research, and estimates of their effectiveness may offer further insight into the value of such types of programs for military recruiting and training.

IV. CONCLUSIONS

The results of existing research generally support what seems intuitively obvious—the greater the knowledge that people and organizations have when evaluating the conditions of future employment, the greater the likelihood that better person-job matches will be created. Whether the benefits of reduced personnel attrition outweigh the costs of RJP development and implementation, or imply higher recruiting costs due to reduced job acceptance rates by potential applicants is, for now, still an open question. As a recent study suggests, the gains to individuals and organizations of RJPs may be comparatively inexpensive in terms of money and effort:

> Because RJPs are relatively inexpensive to implement, often requiring little more than a thorough job analysis and open discussions with incumbents, organizations implementing appropriate RJP programs could realize huge savings in reduced turnover, decreased selection costs and increased performance (Phillips and Gully, 1997).

Central to this line of reasoning are the issues of how inexpensive "relatively" is, and how "huge" are the savings. Premack and Wanous (1985) estimate that an organization with an initial turnover rate of 50 percent should achieve a decrease of 12 percentage points through the use of RJPs. At the same time, firms with turnover rates of 20 percent should expect to reduce attrition by 6 percentage points. Historical first-term attrition rates for the Navy fall within this range, implying gains of approximately 8 percentage points—or about 4,500 more sailors per year. If these results are transferable, the potential savings is approximately $54 million in basic training costs alone, using the GAO (1997) basic training cost estimate of $12,077 per Navy recruit.

Although discrete estimates of the effect of pre-hire RJPs within a military setting are currently unavailable, existing research on civilian firms suggests that the effects are probably transferable. In the quantitative world of military manpower analysis, simply accepting that the effects of RJPs on turnover are consistent, even directionally correct, without some estimate of magnitude, is undoubtedly discomfiting. It represents a leap-of-faith that few policy-makers would be likely to take. Nevertheless, as Quade (1989) points out:

> A great pitfall of quantitative analysis and modeling is to quantify what we can, *not* what is relevant, neglecting the difficult—like the drunk looking for his key under the lamppost because the light there was better, even though he had dropped it in the dark around the corner.... Judgment and intuition are an integral part of analysis and cannot be avoided (Quade, 1989).

Recall from the tabulated results of 15 individual RJP studies displayed in Table 3.1 that, although seven of reports of reduced turnover were statistically significant, six were not. An apparent shortcoming of attempting to measure the results attributable to RJPs is due to an inability to isolate the effect of the treatment, given the psychological subtleties of the individual decision-making process. An additional source of weakness is probably resident in the survey measures and other tools that are attempting to quantify subjective information. In short, at least some of what the researchers have attempted to measure may be impossible to quantify. As Premack and Wanous (1985) contend, "there are many reasons why employees leave an organization," and "the impact of the RJP is limited because it concerns a subset of the factors influencing job survival." This line of reasoning, admittedly subjective, may serve to explain some of the variability witnessed between studies. Still, the cumulative evidence suggests that RJPs do, in fact, "work," as

measured by lower rates of turnover among the newly hired. What is less clear, apparently, is *how* they work—knowledge that would be of value in designing the intended outcomes of an RJP.

It is important to keep in mind, of course, that not all attrition by Navy recruits is bad. In some cases, personnel turnover is both necessary and desirable. Providing RJPs will not guarantee that every person who enters the Navy also finds a perfect person-job match. Since the personal ambitions or desires of individuals are expected to evolve and change over time, for many, the "perfect" job is a moving target anyway. RJPs appear to be an effective mechanism for accelerating early, less expensive turnover. The combined effects of forcing early turnover and improving the person-job match should result in a force that is less likely to be deluded by unexpected job characteristics and outcomes, more committed to those jobs, and less likely to discharged prematurely after the Navy's substantial investment in training.

V. RECOMMENDATIONS

If the results observed in the studies that were reviewed in this thesis are replicable, then there appear to be quantifiable benefits to the military of administering RJPs to potential enlistees. In particular, the greatest gains seem to be tied to providing new recruits with some type of audio-visual RJP prior to active duty. Given the variety and complexity of Navy occupational areas, a continuum of RJPs, ranging from general to job-specific (paralleling the early training processes), is probably the most appropriate. The following section offers recommendations for further research, as well as a general approach to developing just such a continuum.

A. FURTHER RESEARCH

Developing empirical estimates of the effects of pre-enlistment RJPs would require additional study, considering that research into this specific question is (apparently) yet to be addressed. Researchers have been aware of shortcomings in this area for some time now. In their 1979 study of Marine Corps recruits, Horner et al., offered the following suggestion:

> Conceptually and pragmatically an experimental evaluation of RJPs at the recruiting step, prior to joining, is needed. While the recruiting function may object, it could be argued that self-selection decisions will be improved with a RJP prior to enlistment, thus potentially reducing attrition among those who join.

An obvious, preliminary step would be to conduct a small-scale pilot project. A low-risk approach would be to administer a continuum of RJPs, as discussed above, in a geographic area, or zone, in which Navy recruiting goals are met with relative ease

(understanding, of course, that these zones are normally relied upon to compensate for regions that are less productive).

Prior to conducting the pilot study, a baseline assessment of recruiter productivity within the region in question must be determined. The pilot project should then attempt to determine the base (or control group) acceptance rate, in comparison with the acceptance rate for persons who are randomly assigned to a preview group. Use of a "contact-to-contract" ratio should provide a simple measure of recruiter productivity, as well as a measure of the effect of RJPs upon job acceptance rates.

Finally, subjects who were provided the RJP should be tracked for some period of time to determine the effectiveness of RJPs upon retention in comparison with the control group. The groups should be tracked for at least their first year in the Navy, a period of time that includes basic and follow-on training. According to the GAO (1997), over one-half of total first-term attrition occurs in the first year of military service; thus, meaningful results could be observed rather quickly under this observation scheme.

B. A PROPOSED IMPLEMENTATION MODEL

If the benefits of RJPs are transferable to a military setting, as they appear to be, then the magnitude of the effect may be of lesser concern than the opportunity cost associated with awaiting the results of further study. In any case, a variety of implementation options are available, ranging from a relatively simple "one-size-fits-all" written pamphlet, to highly organized, rate-specific, personal tours of squadrons, ships, submarines, hospitals or clinics, or construction battalions for prospective recruits. The

following represents a general overview of but one of many such options included within this range of possibilities.

Use of the "continuum approach," described in greater detail below, might be the most effective means of attracting and socializing new recruits. The DEP represents a particularly appealing opportunity during which to present serial RJPs. Because audio-visual RJPs have been shown to be particularly effective, and considering the geographical dispersion of recruiting sites, some sort of video medium might be best suited for military use. These videos could be either conventional videotapes, or perhaps computerized videos that are available on CD-ROM or via the Internet. From a qualitative perspective, computerized presentations hold the promise of appealing to a more technologically advanced audience, and may be easier to update.

These video presentations should fairly represent a range of military work and lifestyle factors. Specifically, on the first visit to the recruiting office, an applicant could be asked to view a short video on life aboard a Navy vessel. The development cost for this type of presentation is negligible, as it could be obtained from one of the many news organizations that produce news pieces or short documentaries for public consumption.

On subsequent visits, the applicant could view platform- (ship, submarine, squadron) and rating-specific videos featuring presentations by job incumbents. This could help candidates to better select an occupation for which they felt they were suited, assuming that they were otherwise qualified in terms of education and aptitude.

Location permitting, applicants in fleet concentration areas such as Jacksonville, Florida and San Diego, California could be offered the opportunity to spend some time

"job-shadowing." These candidates would visit a squadron, ship, submarine, construction battalion, or clinic and view first-hand the environment in which they expected to be assigned. They could accompany "mentors" who were currently working in the prospective rating, and observe the duties and working conditions associated with these jobs.

This idea is very similar to the internships offered by countless organizations. Organizations offer non-paying or low-wage internships as an opportunity for interested applicants to gain experience in a career field in which they are interested. During the internship, organizations and individuals concurrently evaluate one another. Internships are frequently used as part of a larger recruiting strategy, resulting in job offers to high-performing interns. These offers, if accepted, are thought to be indicative of good person-job matches.

Finally, the basic training process could be re-engineered to provide a short period at the beginning of training, similar to the Toyota hiring model (Maynard, 1997), in which applicants could opt out of the job after being permitted the opportunity to experience it. This may not be as risky or controversial as it seems at first glance, for a couple of reasons. First, this suggestion assumes that the people who reported for recruit training have, by this point, been exposed to several RJPs of varying detail. They have, by definition, and by personal choice, been carefully screened for this training opportunity, having had previous chances to discontinue the employment process. This should somewhat mitigate the risk that they will quit during the initial stages of recruit training, if given the chance. Further, GAO (1997) estimates that the marginal costs of

processing and transporting a trainee to boot camp are relatively low—these expenses include average costs of $83 for transportation to boot camp (plus $83 to transport them home, should they quit), $91 for a medical examination, and $817 for male recruit clothing issue ($995 for women). During the entire course of boot camp, it costs an additional $3,650 to pay, feed and house each recruit (GAO, 1997). Given that the "penalty-free-withdrawal" from training option would be intended to be offered very early in the process, only a small portion of that $3,650 expense is of relevance during the RJP period. Also, the requirement to issue uniforms could be delayed until after the RJP period. Recruits could be issued inexpensive coveralls until the decision point to continue in training is reached. Issuance of uniforms after the trial period might even have a psychologically "binding-in" effect, by representing the first step in the transformation from citizen to sailor. Finally, it may well be that providing interested applicants the opportunity to attempt boot camp, without a severe penalty for failure, might somewhat offset the potential for reduced rates of job acceptance associated with pre-hire RJPs. In other words, more people might be interested in joining the military if they were given an opportunity to experience the lifestyle on a trial basis. In the end, only the most committed would still likely survive the trial period, resulting in more organizationally-desirable recruits.

Should this option be implemented, a logical extension of the model might be to assign people to RJP groups specifically targeted toward their intended specialties. For example, a recruit with guaranteed follow-on training in an aviation field would be assigned to an RJP group that involved aviation-specific exposure. At a minimum,

separate groups for aviation, surface, and sub-surface communities could be formed. Recruits who do not have a guarantee for occupational training, or whose follow-on training included medical or service specialties, could be assigned to the three larger groups, as necessary, to even the training load, much as they are dispersed throughout the fleet.

In an absolute sense, the training offered during the RJP, or trial, period should be difficult, but not overwhelming, and interesting, but relevant. If properly designed, at the end of the RJP period, the recruits would have been exposed to some of the more challenging or unpleasant characteristics of their future jobs. Again, this option provides an opportunity for reciprocity in evaluating the person-job match. The Navy could invoke its option to reject a candidate just as easily as the candidate could elect to quit the Navy. This option assumes that a support system exists that enables individuals to make informed, well-counseled decisions regarding their retention alternatives. Such a program would also have the potential to accelerate early attrition. For this reason, savings in later training resources should be observed, since, presumably, at least some of the early attrition would have taken place anyway, failing the outcomes of this process.

In the end, by strengthening the self-selection effect, the organization and its people should enjoy the benefits that accrue from improved person-job matches. For those who choose to quit, allowing them to leave early and without fear of retribution may have additional, qualitative benefits. Because they were treated with fairness and honesty, they may return to their communities at least neutral in opinion, but perhaps as advocates of the military and its selection and training processes.

Again, this is but one suggestion for implementing RJPs during the initial stages of organizational entry. It should be emphasized that RJPs can be used not only to offer information to the applicant that may improve the person-job match, but also to assist in the transformation process for new entrants. The following quote serves to emphasize the importance of RJPs for their ability to positively influence the socialization of new recruits:

> The potential to present a favorable climate to newcomers is a strong plus for RJPs. If for no other reason, organizations should at least attempt RJPs on moral grounds. Organizations hiring many newcomers who are entering their first job have an even greater obligation to help the newcomer adjust as quickly and as painlessly as possible (Horner et al., 1979).

This may be among the most compelling arguments of all for RJPs. Most people would probably rather be told the truth rather than have it withheld. The more information one has when contemplating a decision, the greater the individual volition. Choices that are made consciously, and with more-or-less complete knowledge of the consequences, are probably more personally valued. In the end, the effects of "buyer's remorse" are lessened, resulting in greater satisfaction among all concerned. In the final analysis, while there may be a price to be paid for honesty in describing the conditions of employment—in the form of reduced job acceptance—there are possibly even higher costs associated with being less than honest—higher turnover, lower levels of employee satisfaction, and organizational reputation.

C. DIRECT AND INDIRECT COSTS AND BENEFITS

Given the fierce competition for resources within the military, and considering the difficulties recruiters have had in meeting enlistment targets, the benefits versus costs of implementing RJPs should be thoroughly considered. Although the literature is very specific concerning the benefits of RJPs—particularly in terms of estimating their effects on attrition—discussions of costs are far more nebulous. In general, discussions of costs associated with the use of RJPs are limited to the reduced acceptance rate among applicants, implying higher recruiting costs, and the cost of developing the RJP itself. The lack of data regarding baseline acceptance rates for the Navy has already been acknowledged. Thus, the present study focuses exclusively on developmental costs, including some of the direct and indirect costs of implementing RJPs on a pre-hire basis. Several benefits of RJPs are also weighed against these costs. It should be noted again that the primary argument for adopting RJPs is the reduction of turnover rates for first-term enlistees. If RJPs were not adopted, the costs and benefits described below would be basically irrelevant.

In general, the pre-hire studies examined in this thesis demonstrate the value of RJPs for organizations that hire far fewer people per year than does the military. The Navy recruiting goal for FY 1998 was 56,000 enlistees (D. Bohn, personal communication, January 13, 1998). Developing and presenting RJPs on this scale implies a whole new set of problems. One such problem is the dollar-cost of research and development. The variety of Navy jobs—administrative, mechanical, food-service, or special forces, for example—dictates that a number of RJPs would be required. Some

Navy jobs—those in which attrition is not currently a problem—may not require an RJP, if reduced turnover is the primary criterion of interest. A thorough job-analysis for each Navy occupation would be required to ensure that the desired outcomes are modeled in each RJP offering. If properly developed, though, the RJPs should be useful on a large scale in terms of recipient population and time. Simply put, many potential enlistees could be exposed to the RJPs over some period of time, the length of which is dependent not only upon the initial quality of the RJP design process, but also on the stability of the work environment being presented. The estimated costs of development could be amortized on a per-person basis with regard to the number of people expected to be exposed to the RJP during its projected period of validity. This calculation would allow an individual-level comparison of RJP development costs with the marginal costs of recruit training discussed earlier in this chapter. Unfortunately, estimating these development costs is beyond the scope of this thesis.

Once these jobs are analyzed, and RJPs developed (if necessary), a means of providing the preview must be established. One way that may hold down costs is to make the RJP available on the Internet, which could reduce the costs of distributing and updating the RJP. At the same time, recruiters would be required to have Internet access, since it is likely that technologically-disadvantaged youth would not otherwise be able to obtain the information.

The savings resulting from any hypothetical decreases in attrition may also have a leveraging effect that becomes more pronounced with time. Since part of the annual recruiting goal is driven by unplanned losses resulting from early attrition, reductions in

attrition should serve to drive down these goals, resulting in eventual cost-savings that may not be evident at first. Additionally, the need to recruit fewer people each year implies that recruiters can then be even more selective—further leveraging the initial retention gains attributable to RJPs. These gains could rapidly offset the anticipated initial rise in recruiting costs caused by increases in the (yet unknown) contact-to-contract ratio—increases that might be expected as a result of presumed decreases in the rate of job acceptance. If Premack and Wanous (1985) are correct in concluding that their observations, though modest, are consistent, then the continual effects of improved retention for first-term enlistees, taken together with more selective recruiting, should rapidly reach a steady-state condition that closely approximates some unknown (but probably lower) "natural" rate of attrition.

If this potential leveraging effect holds true, then the Navy's personnel processes would require major changes to reflect the higher survival rates. As an example, the promotion and pay systems might require changes to reflect the decreased upward-mobility implied by people staying in the personnel system for longer periods of time. There is a definite risk that, at some point, the rank structure could become bloated with people unable to move up because of higher retention (lower attrition) rates at the upper levels. Future research should include estimates of the degree to which changes in attrition rates affect personnel inventories and their related systems. The Navy already uses manpower models that could provide such estimates. If modeling indicated intensified competition for promotions at the lower pay levels, new compensation plans that were responsive to these diminished advancement opportunities would be needed. It

is likely that developing these alternative compensation plans may represent one of the highest costs, since changes to the promotion and pay systems of the military are subject to influence on many levels. In addition to the many civilian and military personnel professionals involved, any changes would need to be approved and funded via Congressional action—after being scrutinized by a legion of special-interest groups and Senate and House staffs and sub-committees. The incidental person-hour costs associated with this activity are, by themselves, staggering.

Equally difficult to quantify is the risk that organizations may become stagnant in their thinking without the fresh insights that new recruits bring with them upon entry. Simply put, the greater in quantity and diversity the entering workforce, the more likely that an organization will confront opportunities to change. Suppose that the net effect of RJPs is to attract a smaller number of recruits who exhibit a definite preference for the peculiarities of Naval service as perceived at the time of enlistment. This condition could actually have a negative effect on the service over time. To illustrate, when an enlistee leaves the Navy before completing the first-term, it is both a problem and an opportunity. The problem is obvious—a replacement must be found and the cost of training duplicated. The opportunity is less obvious—the reason the recruit became dissatisfied and left may identify problems within the organization that need attention. If the source of dissatisfaction can be identified and corrected, then the Navy can improve its working conditions for all who remain. Many Navy quality-of-life initiatives have been driven by complaints and problems as well as by the comments of departing servicemembers. In this sense then, attrition is "good" for an organization since it serves as an indicator or

warning sign. RJPs, by attracting people to the Navy who may be willing to tolerate some dissatisfaction in exchange for the overall desirability of the job, may, in fact, slow the pace of improvement in working conditions within its ranks. This could make it ultimately more difficult to recruit in the future, if improvements in working conditions for society-at-large outpace those within the Navy. In this sense, RJPs have a difficult-to-quantify, but nonetheless potentially high, cost associated with their use.

Finally, a potential source of long-term savings lies in overhead, as the training support infrastructure could be reduced to reflect the lower requirement for training replacements. As GAO (1997) notes, though, the requirement to maintain a training base adequate to support increased training requirements in times of national emergency limits the total savings available in this area. These are but a few illustrative examples of new problems that could be encountered by reducing turnover using RJPs—there are doubtless others. It is important to consider the cause-and-effect relationships that would be affected, some profoundly, by introducing such sweeping change into a relatively stable system.

D. CONCLUSION

There is little doubt that the increasing emphasis on recruiting high school graduates, the search for computer-literate enlistees by advertising on the Internet, and the targeting of college campuses for enlistees who may be contemplating a break from their academic pursuits, represent a gradually increasing sophistication of the enlisted force. Yet, the recruitment and initial training processes are, in may ways, unchanged

from their draft-era origins. As Binkin and Eitelberg (1982), cited in Eitelberg et al. (1984), note:

> Whether the standards used for enlistment, job classification, and assignment are as valid as adherence to them implies is an open question. While in many cases present standards are based on years of experience and are the products of extensive and rigorous research, in others they appear to be nothing more than legacies of the conscription era when there was virtually no pressure on the armed forces to justify their manning criteria.

The basic training process appears to be one such legacy. Insofar as many draftees may have required the sharp wake-up call to military service that boot camp provides, that radical transformation process may have outlived its usefulness. Today's recruits are better educated and more sophisticated than their conscripted predecessors. Higher levels of sophistication probably imply higher individual expectations. Their decision to serve has been considered in light of many competing alternatives, including continued education—an option that DoD advertises as a benefit of enlistment. The qualitative benefits of our current accession and training processes must be viewed in light of this increasing sophistication of the youth-eligible recruiting market.

At least four emergent Navy policies combine to make the concept of providing RJPs more appealing in late 1990s. The first is the renewed emphasis on the Navy's core values of honor, courage, and commitment. Clearly, having the moral courage to tell prospective applicants, in all honesty, about both the negative and positive aspects of their future job is in keeping with the spirit of these values. The current military hiring model, which features the use of recruiters as "salespeople," may present somewhat of a moral dilemma with regard to the Navy's core values. Any blame does not, however, lie

with the recruiters, but rather with the incentive and screening systems under which recruiters operate. Recruiters are rewarded for putting as many "qualified" people in the military as they are able—there is no incentive for screening out people who may not demonstrate the personal characteristics that, in the opinion of the recruiter, are associated with success. This is strictly an outcome of the quota-driven system, and it usually results in recruiters fulfilling more of a role of salesperson than that of a human-resources professional representing a multi-billion dollar global organization.

Next, is the increasing emphasis on bringing business-based practices such as process improvement and team skills into the day-to-day operations of the Navy. With regard to reciprocity in evaluating the job match, recruiting into this environment should include screening for the ability to work in groups, and demonstrate problem-solving and conflict resolution skills in a team environment. These behaviors could be modeled in the RJP construct, providing yet another relevant measure of the person-job match.

Third, reducing attrition is a cornerstone of the Navy's stated personnel policy of "maturing the force." This policy relies less on the lower marginal contributions of new accessions and more on the increased productivity inherent in careerists. This increased productivity is further leveraged by the fact that less time would be required to supervise trainees. Such a policy would be better supported if mid-grade personnel who are to make up the force are motivated to stay not only by increased economic incentives, but also by increased job satisfaction as a result of a mutually beneficial person-job match.

Finally, the development of RJPs targeted toward specific Navy ratings would require an evaluation and inventory of all jobs. Of particular interest here would be jobs

that have the most objectionable characteristics. This forces the issue of whether or not these jobs could be re-engineered, or environmentally improved, such that they are less objectionable, and less likely to have lower acceptance rates. This suggests an obvious tie-in with the Navy's "Smart Ship" initiative, which serves to reduce crew sizes by removing unnecessary processes and "taking work off of the sailor's back." Smaller crew sizes are clearly more effective when people are matched properly to jobs, and when those jobs do not entail needless or noxious tasks.

In closing, most of the recommendations offered here could be implemented on a relatively small-scale to estimate their effectiveness. Of primary interest are the cost considerations of RJP development and implementation, and the recruiting costs associated with reduced rates of job acceptance. The benefits of reduced turnover are more well-known, and include reduced training costs and, ultimately, reduced recruiting costs. In the end though, the best argument for incorporating RJPs may defy quantitative justification. Telling the whole truth to potential enlistees is a moral imperative—the Navy should offer no less in terms of honesty than it expects from those within its ranks.

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